Alabama.—Birmingham, 6th.
Arkansas.—Lead Hill, 3d.
Colorado.—West Las Animas, 3d; Pike's Peak, 12th, 19th.
Dakota.—Fort Sisseton, 26th, 28th, 29th.
Indiana.—Laconia, 3d.
Kansas.—Fort Scott, 2d; El Dorado, 2d, 3d; Ninnescah, 3d.
Kentucky.—Louisville, 2d.
Maine.—Eastport, 6th, 7th; Bar Harbor, 7th.
Massachusetts.—Heath, 6th; Princeton, 6th, 7th.
Michigan.—Marquette, 24th.
Missouri.—Springfield, Centreville, and Lamar, 3d.
Nebraska.—Fort Niobrara, 25th, 28th.
New Jersey.—Clayton, 4th; Beverly, 4th, 5th.
New York.—Le Roy, Humphrey, and Rochester, 6th.
Ohio.—Wauseon, 1st.
Oregon.—Linkville, 1st.
Pennsylvania.—Wellsborough and Philadelphia, 4th; Fallsington and Pittsburg, 5th.
Texas.—El Paso, 12th.

TEMPERATURE OF WATER.

The following table shows the highest and lowest temperatures of water observed at the several stations; the monthly ranges of water temperature; the average depth at which the observations were made; and the mean temperature of the air:

Temperature of water for April, 1886.

Station.	Temperature at bottom.		Range.	Average depth, feet and tenths.	Mean temperature of the air at station.
	Max.	Min.			
	°	°	°		°
Atlantic City, New Jersey	55.9	41.8	14.1	9.5	48.0
Alpena, Michigan*	46.8	30.9	15.9	12.7	38.1
Augusta, Georgia	71.0	53.8	17.2	13.3	63.1
Baltimore, Maryland	63.3	44.8	18.5	10.3	54.6
Block Island, Rhode Island	47.5	36.5	11.0	8.1	45.2
Boston, Massachusetts	52.6	39.4	13.2	20.5	47.7
Buffalo, New York	53.7	38.1	15.6	9.6	46.3
Canby, Fort, Washington Ter	55.2	47.3	7.9	16.2	48.2
Cedar Keys, Florida	75.4	59.3	16.1	8.5	65.8
Charleston, South Carolina	68.9	58.7	10.2	38.0	62.4
Chicago, Illinois	53.7	35.6	18.1	8.1	49.1
Chincoteague, Virginia	63.1	46.8	16.3	3.2	51.9
Cleveland, Ohio*	57.7	35.3	22.4	14.0	49.1
Detroit, Michigan	51.3	32.3	19.0	26.8	50.6
Duluth, Minnesota					
Eastport, Maine	40.1	35.0	5.1	16.6	40.1
Escanaba, Michigan*	45.7	37.9	7.8	18.2	38.0
Galveston, Texas	75.0	59.3	15.7	13.0	66.5
Grand Haven, Michigan	66.0	36.6	29.4	19.0	47.3
Indianola, Texas†					
Jacksonville, Florida	75.7	64.0	11.7	18.0	66.5
Key West, Florida	81.0	75.3	5.7	19.5	74.5
Mackinaw City, Michigan*	37.9	33.2	4.7	10.0	38.0
Macon, Fort, North Carolina	67.8	57.5	10.3	10.8	60.6
Milwaukee, Wisconsin*	52.6	46.3	6.3	8.0	43.4
Mobile, Alabama	68.5	59.0	9.5	18.4	63.9
New Haven, Connecticut	54.0	39.0	5.0	16.6	48.3
New London, Connecticut	49.5	37.6	12.9	12.7	48.1
New York City	52.5	40.0	12.5	18.5	50.3
Norfolk, Virginia	62.7	47.2	15.5	15.8	56.1
Pensacola, Florida	70.9	61.2	8.7	17.8	65.3
Portland, Maine	48.4	35.8	12.6	16.1	44.7
Portland, Oregon	54.9	48.9	6.0	51.1	49.9
Sandusky, Ohio	61.0	33.8	27.2	10.8	48.3
Sandy Hook, New Jersey	51.3	37.5	13.8	12.3	48.7
San Francisco, California†					
Savannah Georgia	70.3	55.1	15.2	10.1	64.7
Smithville, North Carolina	69.4	57.6	11.8	10.8	60.9
Toledo, Ohio	70.4	34.2	36.2	13.1	49.0
Wilmington, North Carolina	70.6	56.3	14.3	11.5	62.1

*Observations interrupted by ice; see text. †Observations temporarily suspended.

Observations were interrupted by ice throughout the month at Duluth, Minnesota. Observations were also interrupted by ice at Mackinaw City, Michigan, from the 1st to the 26th; Escanaba, Michigan, from the 1st to 25th; Alpena, Michigan, from the 1st to the 6th.

WINDS.

The most frequent directions of the wind during April, 1886, are shown on chart ii by the arrows flying with the wind; they are also given in the tables of miscellaneous meteorological data. In the Lake region, and along the Atlantic coast from Boston, Massachusetts, to Key West, Florida, the prevailing winds were mostly from the northeast; in the Gulf States and southern half of the Mississippi Valley they were generally from the southeast; in the north Pacific coast region they were southerly, while along the coast of California they were northwesterly. In the Rocky Mountain districts they were variable.

HIGH WINDS.

[*In miles per hour.*]

Wind-velocities of fifty or more miles per hour were reported during the month, as follows:

Mount Washington, New Hampshire, 110, sw., 1st; 80, nw., 2d; 72, nw., 3d; 90, se., 6th; 53, se., 7th; 77, nw., 9th; 80, nw., 10th; 70, nw., 11th; 62, w., 12th; 60, nw., 13th; 56, nw., 21st; 50, w., 22d; 82, w., 23d; 78, w., 24th; 50, nw., 26th.

Pike's Peak, Colorado, 88, w., 7th; 54, sw., 18th; 52, nw., 26th; 64, w., 27th; 52, nw., 29th.

Cape Mendocino, California, 60, se., 1st; 57, se., 8th; 70, se., 9th; 56, se., 12th; 65, se., 14th; 65, se., 15th; 80, se., 16th.

Valentine, Nebraska, 52, s., 21st; 52, n., 25th; 50, n., 26th.
West Las Animas, Colorado, 50, s., 8th.
Dodge City, Kansas, 52, se., 22d.
Eastport, Maine, 70 (estimated), ne., 7th.
Boston, Massachusetts, 51, e., 6th.
Fort Maginnis, Montana, 62, nw., 15th.
Sandy Hook, New Jersey, 60, e., 6th.
Fort Elliott, Texas, 50, se., 23d.

LOCAL STORMS AND TORNADOES.

Los Angeles, California: a thunder-storm, with hail and high wind, passed over this place on the 11th. Considerable damage was done to the track of the Southern Pacific Railroad between Los Angeles and San Fernando, causing a delay of trains. A number of cellars were flooded. The grain crop suffered severely, being beaten down by the hail. This storm is reported to have been equally as severe at San Diego.

Abilene, Texas: a heavy thunder-storm, accompanied by hail, passed over this place on the 12th, lasting from 8.45 to 10 p. m. The ground was covered with hail, measuring from one-fourth to an inch in diameter. The wind being light, but little damage resulted from the storm.

Nicolaus, Sutter county, California: on the 13th, at 7.45 p. m., a heavy thunder-storm occurred, which is an unusual phenomenon for this place. The track of storm was about twelve miles wide. Five miles below here the precipitation was in the form of hail, which did not all melt until noon next day. Farmers report many wild geese picked up on the plains, killed either by hail or lightning.

Sauk Rapids, Saint Cloud, and Rice Station, Minnesota, and vicinity, were visited on the afternoon of the 14th, shortly after 4.00 p. m., by one of the most destructive tornadoes that has ever been reported in the Northwest. When first seen it was in the shape of a long and exceedingly black, funnel-shaped cloud, surrounded on all sides by perfectly clear sky, the tube of the funnel having a spiral shape and touching the ground. The general course of the tornado was from the southwest towards the northeast. When it had advanced until it was over the towns the air was so dark that it was impossible to see more than five feet.

The description below of the tornado as it appeared at Saint Cloud is given by an eye witness:

The tornado must have formed rapidly, and just about over the lake, as it was there when first noticed. It was very black, and seemed to be constantly in motion. It was moving rapidly across the lake when first seen, was flat and oval in shape, with a sort of spiral at each of the extremities, one extending upward and the other downward. It was peculiar in appearance, and I watched it closely. After having passed across the lake it seemed to stop. The movement resembled that of a fan opening and closing, and it remained stationary for some seconds. Almost instantly the form changed. Instead of lying flat, it seemed to turn on end and the spirals that ran up from the other end formed a part of a big double spiral. It had a movement that was peculiar, as if there was a commotion within it. The course was rapid and as soon as the big spiral was formed it began moving at a terrific rate in a course that was somewhat zigzag. It dropped down to the ground, and I saw the entire work of ruin. The course of the tornado after crossing the river was rather sinuous, though hardly as much so as before. It swept across the country, and in five minutes